

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

NOTES ON SPECIES OF *LETHOCERUS* MAYR AND
HYDROCYRIUS SPINOLA DESCRIBED BY GUERIN-
MENEVILLE, L. DUFOUR, A. L. MONTANDON, AND
G. A. W. HERRICH-SCHÄFFER (BELOSTOMATIDAE;
HEMIPTERA)

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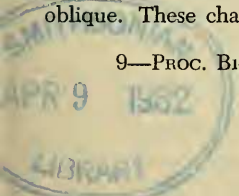
During my work on a revision of the Western Hemisphere *Lethocerus* the identity of several species, hitherto poorly known, has been ascertained. Since it will be sometime before my revision is finished it is desirable to make this data available now.

My sincere thanks are given to Dr. R. M. Bohart, University of California, Davis, for making comparisons and notes on the Guerin types in Naples. Dr. Max Beier, Naturhistorisches Museum, Wien, has lent the types of several species described by Dufour and Montandon, and I would like to express my appreciation for his generosity.

Guerin-Meneville, 1856

In 1856 Guerin listed five species of Belostomatidae from Cuba, four of which he described as new: *Belostoma medium*, *curtum*, *capitatum*, and *angustatum*. His fifth species was "*Belostoma grande* Linnaeus" which undoubtedly referred to the species now known as *Lethocerus colossicus* (Stal).

The first author to consider Guerin's species was Mayr (1865) who synonymized *B. capitatum* with *Hydrocyrius columbiae* Spinola. In 1910 Montandon (see Hussey, 1952) saw Guerin's types and verified that *capitatum* was a *Hydrocyrius*. De Carlo (1938) considered *capitatum* synonymous with *Lethocerus annulipes* (Herrich-Schäffer) probably on the basis of Guerin's original description which states that *capitatum* has two dark longitudinal lines on the abdominal venter. It is true that *L. annulipes* has this character but *H. columbiae* does also, and had De Carlo been aware of Montandon's paper he probably would not have made the above synonymy. In his description, Guerin emphasized that the head of *capitatum* was very broad and the eyes large and oblique. These characters fit *Hydrocyrius* much better than *Lethocerus*.



According to Bohart's notes, the type of *capitatum* is a female and bears a green Guerin type label, and another label "Cuba?," the latter indicating that Guerin himself was not sure of the origin of the specimen. It is interesting to note that Spinola described *Hydrocyrius* from Colombia. All species of this genus are African.

Guerin's *Belostoma angustatum* was tentatively placed in synonymy with *L. (Benacus) griseus* (Say) by Mayr in 1871. Montandon after seeing the type in Naples verified Mayr's assumption. Bohart's notes leave little doubt that both Mayr and Montandon were correct. The type lacks grooves on the profemur and *L. griseus* is the only known species with this feature. The type is a female and bears one of Guerin's green type labels, "Cuba, No. 260," and a 1908 Montandon determination label, "*Benacus griseus* Say."

Belostoma medium was synonymized with *L. annulipes* by Montandon in 1910 (see Hussey, 1952). Hussey suggested that Montandon's *annulipes* should be considered the same as *delpontei* De Carlo, not *annulipes* (Herrich-Schäffer). What Hussey did not realize however, when he made this statement, is that *delpontei* is strictly a South American species, and the entity in North and Central America that has been masquerading under De Carlo's name is a different species. Bohart's notes on the type of *B. medium* prove that Guerin's name should be applied to this undetected species. Although the type has lost both middle and hind pairs of legs it compares very favorably with Cuban specimens that I gave Bohart. The details of the head as well as the typical reddish color of the abdominal venter agree with my Cuban material. The abdomen of the type is badly eaten by pests but the genital plate is intact and the specimen is a male. It has a green Guerin type label, "Cuba," and a 1908 Montandon determination label "*Lethocerus annulipes* H. S." *L. medius* and *delpontei* are very similar externally but the male genitalia are strikingly different. In *medius* the ventral diverticulum of the phallus bears a median, ventral semicircular flange, apically. This flange is very prominent in a lateral view of the phallus. In *delpontei* the flange is weakly developed and not visible in lateral view, the lateral margins of the diverticulum extending below it.

Dr. Bohart could not find any specimens at Naples labeled *Belostoma curtum*. Montandon (1910, see Hussey, 1952) mentions a specimen at Naples labeled by Guerin "latum, type," and states that it probably is a lapsus, inferring that the specimen is the type of *B. curtum*. Bohart saw the specimen referred to and found it to be identical with *L. medius* Guerin. It is a male and bears a green Guerin type label, and another, "Cuba." I agree with Montandon's theory and place *curtus* in synonymy with *medius*.

Leon Dufour, 1863

Leon Dufour described several New World species of *Lethocerus* under the name *Belostoma*: *ruficeps*, *signoreti*, *distinctum*, *litigiosum*, and *obscurum*. I have not seen the types of the last three.

The type of *ruficeps* is a female and bears the following labels:

"Brasilien, Coll. Signoret;" "*ruficeps*," det. Dufour; "*annulipes*," det. Mayr; "*annulipes*," det. Montandon. The specimen agrees with Dufour's meager description except for the length. He gave the length as 35 mm but the type is 64.5 mm long. Dufour's measurement must be a lapsus since no species of *Lethocerus* are that small. *B. ruficeps* should be synonymized with *L. annulipes* (Herrich-Schäffer). The longitudinal black lines on the abdominal venter characterize *annulipes* and are present in *ruficeps*.

There are four specimens in the Vienna Museum labeled by Dufour as *Belostoma signoreti*, but he cited only one example in the original description. Dufour gave the length of the type as 64 mm and one of the four specimens before me, a female, comes close to this, being 66 mm long. I consider this as the holotype. It bears the following labels: "Amer. Merid., Coll. Signoret;" "*signoreti*," det. Dufour; "*annulipes*," det. Mayr; "*annulipes*," det. Montandon. All four specimens have the black abdominal stripes and are *annulipes* (Herrich-Schäffer). The specimen that Dufour described as a variety of *signoreti* is a male *L. medius*. It bears the following labels: "Laguaira, Coll. Signoret;" "*signoreti*," det. Dufour; "*annulipes*," det. Mayr; and "*annulipes*," det. Montandon.

A. L. Montandon, 1896

The type of *Belostoma mayri* Montandon is a female of *Lethocerus annulipes*. The specimen bears the following labels: "Brasil, 12;" "*annulipes*," det. Mayr; and "*mayri*," det. Montandon.

G. A. W. Herrich-Schäffer, 1848

Most authors consider that the common South American species of *Lethocerus* with two black lines on the abdominal venter is the same as that described by Herrich-Schäffer as *Belostoma annulipes*. So far the type has not been located and may be destroyed. The only characters given in the original description are "die vier hinteren Schenkel und Schienen haben unten drei braune Querbinden, aus Sudamerika." This statement would apply to all South American *Lethocerus*. The dorsum (Fig. 803) and the venter (Fig. 804) of this insect are depicted by fairly good illustrations on plate 258 of Herrich-Schäffer's work. The ventral view plainly shows the 3 rings on the femora and tibiae referred to in the description, but there are no solid black lines on the abdomen. The illustrator used a type of stipple shading along both sides of the suture dividing the median and parasternites, but considering the overall accuracy of the drawing, it would seem that if Herrich-Schäffer's type had possessed solid stripes they would have been indicated. Herrich-Schäffer's name would appear to be more appropriately applied to a non-vittate species such as the common South American *delponi* De Carlo. Mayr (1871), acting as first revisor, synonymized *ruficeps* and *signoreti* Dufour with *annulipes*. Dufour's species have the black lines on the venter and Mayr's action indirectly fixed this character with *annulipes*. It is well known that both Mayr and Montandon confused

several distinct species under Herrich-Schäffer's name. No apparent significance was attached to the black lines, and specimens were called *annulipes* with or without them. In 1865 Mayr noted one specimen of *annulipes* differing from the rest in possessing two black lines on the abdomen! Mayr apparently never used the black lines as a specific character for *annulipes*, even in his 1871 revision. However, under the circumstance of common usage, and by Mayr's authority as first revisor, it seems best to retain *annulipes* for the vittate species of *Lethocerus* at least for the present, rather than create needless new synonymy by changing the placement of *annulipes* to a non-vittate species. In so doing, it must be assumed that the lack of definite black lines in the illustration mentioned previously is an illustrator's lapsus.

SYNONYMICAL SUMMARY

The proper placement of the species discussed is shown below. The known distribution of each is given in brackets.

Lethocerus medius (Guerin-Meneville), 1856 [Greater Antilles, Central America, southwestern United States.]

Belostoma medium Guérin-Meneville.

Belostoma curtum Guérin-Meneville, 1856.

Belostoma signoreti (variety) Dufour, 1863.

Lethocerus delpontei Auct., nec De Carlo.

Lethocerus annulipes Auct., nec Herrich-Schäffer.

Lethocerus annulipes (Herrich-Schäffer), 1848 [South America, Lesser Antilles.]

Belostoma annulipes Herrich-Schäffer.

Belostoma ruficeps Dufour, 1863.

Belostoma signoreti Dufour, 1863.

Belostoma mayri Montandon, 1896.

Lethocerus (*Benacus*) *griseus* (Say), 1832 [Eastern United States, east coast of Mexico, Greater Antilles.]

Belostoma angustatum Guérin-Meneville, 1856.

Hydrocyrius columbiae Spinola, 1850 [Africa.]

Belostoma capitatum Guérin-Meneville, 1856.

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